SEQUENCE LISTING

<110> BIOGEN, INC
BROWNING, Jeffrey

<120> BMOG, A Novel Protein Member of the Myelin-Oligodendrocyte Glycoprotein Family and Its Use for Immunomodulatory Purposes

<130> A041 US

<140> 09/560,855
<141> 2000-04-28

<150> PCT/US98/23826
<151> 1998-11-05

<150> 60/064761
<151> 1997-11-07

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<400> 4

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| Cys | Ala | Leu | Trp | Val | Ser | Gln | Pro | Pro | Glu | Ile | Arg | Thr | Leu | Glu | Gly |
| | | | 20 | | | | | 25 | | | | | 30 | | |
| Ser | Ser | Ala | Phe | Leu | Pro | Cys | Ser | Phe | Asn | Ala | Ser | Gln | Gly | Arg | Leu |
| | | 35 | | | | | 40 | | | | | 45 | | | |
| Ala | Ile | Gly | Ser | Val | Thr | Trp | Phe | Arg | Asp | Glu | Val | Val | Pro | Gly | Lys |
| | 50 | | | | | 55 | | | | | 60 | | | | |
| Glu | Val | Arg | Asn | Gly | Thr | Pro | Glu | Phe | Arg | Gly | Arg | Leu | Ala | Pro | Leu |
| 65 | | | | | 70 | | | | | 75 | | | | | 80 |
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| | | | | 85 | | | | | 90 | | | | | 95 | |
| Asp | Val | Arg | Gly | His | Asp | Ala | Ser | Ile | Tyr | Val | Cys | Arg | Val | Glu | Val |
| | | | 100 | | | | | 105 | | | | | 110 | | |
| Leu | Gly | Leu | Gly | Val | Gly | Thr | Gly | Asn | Gly | Thr | Arg | Leu | Val | Val | Glu |
| | | 115 | | | | | 120 | | | | | 125 | | | |
| Lys | Glu | His | Pro | Gln | Leu | Gly | Ala | Gly | Thr | Val | Leu | Leu | Leu | Arg | Ala |
| | 130 | | | | | 135 | | | | | 140 | | | | |

Gly Phe Tyr Ala Val Ser Phe Leu Ser Val Ala Val Gly Ser Thr Val
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Ser Asp Gly Pro Arg Gly Val Ile Pro Glu Pro Arg Cys Pro
180 185 190

<210> 5
<211> 177
<212> PRT
<213> Homo sapien

<400> 5
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Ser Ser Ala Phe Leu Pro Cys Ser Phe Asn Ala Ser Gln Gly Arg Leu
35 40 45
Ala Ile Gly Ser Val Thr Trp Phe Arg Asp Glu Val Val Pro Gly Lys
50 55 60
Glu Val Arg Asn Gly Thr Pro Glu Phe Arg Gly Arg Leu Ala Pro Leu
65 70 75 80
Ala Ser Ser Arg Phe Leu His Asp His Gln Ala Glu Leu His Ile Arg
85 90 95
Asp Val Arg Gly His Asp Ala Ser Ile Tyr Val Cys Arg Val Glu Val
100 105 110
Leu Gly Leu Gly Val Gly Thr Gly Asn Gly Thr Arg Leu Val Val Glu
115 120 125
Lys Glu His Pro Gln Leu Gly Ala Gly Thr Val Leu Leu Leu Arg Ala
130 135 140
Gly Phe Tyr Ala Val Ser Phe Leu Ser Val Ala Val Gly Ser Thr Val
145 150 155 160
Tyr Tyr Gln Gly Lys Tyr Ala Lys Ser Thr Leu Ser Gly Phe Pro Gln
165 170 175
Leu

<210> 6
<211> 201
<212> PRT
<213> Homo sapien

<400> 6
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1 5 10 15
Cys Ala Leu Trp Val Ser Gln Pro Pro Glu Ile Arg Thr Leu Glu Gly
20 25 30
Ser Ser Ala Phe Leu Pro Cys Ser Phe Asn Ala Ser Gln Gly Arg Leu
35 40 45
Ala Ile Gly Ser Val Thr Trp Phe Arg Asp Glu Val Val Pro Gly Lys

```
    50                  55                  60
Glu Val Arg Asn Gly Thr Pro Glu Phe Arg Gly Arg Leu Ala Pro Leu
65                  70                  75                  80
Ala Ser Ser Arg Phe Leu His Asp His Gln Ala Glu Leu His Ile Arg
                85                  90                  95
Asp Val Arg Gly His Asp Ala Ser Ile Tyr Val Cys Arg Val Glu Val
            100                 105                 110
Leu Gly Leu Gly Val Gly Thr Gly Asn Gly Thr Arg Leu Val Val Glu
        115                 120                 125
Lys Glu His Pro Gln Leu Gly Ala Gly Thr Val Leu Leu Leu Arg Ala
    130                 135                 140
Gly Phe Tyr Ala Val Ser Phe Leu Ser Val Ala Val Gly Ser Thr Val
145                 150                 155                 160
Tyr Tyr Gln Gly Lys Cys Leu Thr Trp Lys Gly Pro Arg Arg Gln Leu
                165                 170                 175
Pro Ala Val Val Pro Ala Pro Leu Pro Pro Pro Cys Gly Ser Ser Ala
            180                 185                 190
His Leu Leu Pro Pro Val Pro Gly Gly
        195                 200
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<210> 7
<211> 185
<212> PRT
<213> Homo sapien

<400> 7

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Met Ala Trp Met Leu Leu Leu Ile Leu Ile Met Val His Pro Gly Ser
 1                  5                  10                  15
Cys Ala Leu Trp Val Ser Gln Pro Pro Glu Ile Arg Thr Glu Gly Ser
            20                  25                  30
Ser Ala Phe Leu Pro Cys Ser Phe Asn Ala Ser Gln Gly Arg Leu Ala
        35                  40                  45
Ile Gly Ser Val Thr Trp Phe Arg Asp Glu Val Val Pro Gly Lys Glu
    50                  55                  60
Val Arg Asn Gly Thr Pro Glu Phe Arg Gly Arg Leu Ala Pro Leu Ala
65                  70                  75                  80
Ser Ser Arg Phe Leu His Asp His Gln Ala Glu Leu His Ile Arg Asp
                85                  90                  95
Val Arg Gly His Asp Ala Ser Ile Tyr Val Cys Arg Val Glu Leu Gly
            100                 105                 110
Leu Gly Val Gly Thr Gly Asn Gly Thr Arg Leu Val Val Glu Lys Glu
        115                 120                 125
His Pro Gln Leu Gly Ala Gly Thr Val Leu Leu Leu Arg Ala Gly Phe
    130                 135                 140
Tyr Ala Val Ser Phe Leu Ser Val Ala Val Gly Ser Thr Val Tyr Tyr
145                 150                 155                 160
His Gly Lys Cys His Cys His Met Gly Thr His Cys His Ser Ser Asp
                165                 170                 175
Gly Val Ile Pro Glu Pro Arg Cys Pro
            180                 185
```

<210> 8
<211> 175
<212> PRT
<213> Homo sapien

<400> 8

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Met Ala Trp Met Leu Leu Leu Ile Leu Ile Met Val His Pro Gly Ser
 1               5                  10                  15
Cys Ala Leu Trp Val Ser Gln Pro Pro Glu Ile Arg Thr Glu Gly Ser
            20                  25                  30
Ser Ala Phe Leu Pro Cys Ser Phe Asn Ala Ser Gln Gly Arg Leu Ala
        35                  40                  45
Ile Gly Ser Val Thr Trp Phe Arg Asp Glu Val Val Pro Gly Lys Glu
    50                  55                  60
Val Arg Asn Gly Thr Pro Glu Phe Arg Gly Arg Leu Ala Pro Leu Ala
65                  70                  75                  80
Ser Ser Arg Phe Leu His Asp His Gln Ala Glu Leu His Ile Arg Asp
                85                  90                  95
Val Arg Gly His Asp Ala Ser Ile Tyr Val Cys Arg Val Glu Leu Gly
            100                 105                 110
Leu Gly Val Gly Thr Gly Asn Gly Thr Arg Leu Val Val Glu Lys Glu
        115                 120                 125
His Pro Gln Leu Gly Ala Gly Thr Val Leu Leu Leu Arg Ala Gly Phe
    130                 135                 140
Tyr Ala Val Ser Phe Leu Ser Val Ala Val Gly Ser Thr Val Tyr Tyr
145                 150                 155                 160
His Gly Lys Tyr Ala Lys Ser Thr Leu Ser Gly Phe Pro Gln Leu
                165                 170                 175
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<210> 9
<211> 198
<212> PRT
<213> Homo sapien

<400> 9

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Cys Ala Leu Trp Val Ser Gln Pro Pro Glu Ile Arg Thr Glu Gly Ser
            20                  25                  30
Ser Ala Phe Leu Pro Cys Ser Phe Asn Ala Ser Gln Gly Arg Leu Ala
        35                  40                  45
Ile Gly Ser Val Thr Trp Phe Arg Asp Glu Val Val Pro Gly Lys Glu
    50                  55                  60
Val Arg Asn Gly Thr Pro Glu Phe Arg Gly Arg Leu Ala Pro Leu Ala
65                  70                  75                  80
Ser Ser Arg Phe Leu His Asp His Gln Ala Glu Leu His Ile Arg Asp
                85                  90                  95
Val Arg Gly His Asp Ala Ser Ile Tyr Val Cys Arg Val Glu Leu Gly
            100                 105                 110
Leu Gly Val Gly Thr Gly Asn Gly Thr Arg Leu Val Val Glu Lys Glu
        115                 120                 125
```

```
His Pro Gln Leu Gly Ala Gly Thr Val Leu Leu Leu Arg Ala Gly Phe
    130                 135                 140
Tyr Ala Val Ser Phe Leu Ser Val Ala Val Gly Ser Thr Val Tyr Tyr
145                 150                 155                 160
His Gly Lys Cys Leu Thr Trp Lys Gly Pro Arg Arg Leu Pro Ala Val
                165                 170                 175
Val Pro Ala Pro Leu Pro Pro Pro Cys Gly Ser Ser Ala His Leu Leu
            180                 185                 190
Pro Pro Val Pro Gly Gly
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<210> 10
<211> 161
<212> PRT
<213> Homo sapien

<400> 10

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Cys Ala Leu Trp Val Ser Gln Pro Pro Glu Ile Arg Thr Leu Glu Gly
            20                  25                  30
Ser Ser Ala Phe Leu Pro Cys Ser Phe Asn Ala Ser Gln Gly Arg Leu
        35                  40                  45
Ala Ile Gly Ser Val Thr Trp Phe Arg Asp Glu Val Val Pro Gly Lys
    50                  55                  60
Glu Val Arg Asn Gly Thr Pro Glu Phe Arg Gly Arg Leu Ala Pro Leu
65                  70                  75                  80
Ala Ser Ser Arg Phe Leu His Asp His Gln Ala Glu Leu His Ile Arg
                85                  90                  95
Asp Val Arg Gly His Asp Ala Ser Ile Tyr Val Cys Arg Val Glu Leu
            100                 105                 110
Gly Leu Gly Val Gly Thr Gly Asn Gly Thr Arg Leu Val Val Glu Lys
        115                 120                 125
Glu His Pro Gln Leu Gly Ala Gly Thr Val Leu Leu Leu Arg Ala Gly
    130                 135                 140
Phe Tyr Ala Val Ser Phe Leu Ser Val Ala Val Gly Ser Thr Val Tyr
145                 150                 155                 160
Tyr
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<210> 11
<211> 185
<212> PRT
<213> Homo sapien

<400> 11

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Met Ala Ser Leu Ser Arg Pro Ser Leu Pro Ser Cys Leu Cys Ser Phe
 1               5                  10                  15
Leu Leu Leu Leu Leu Leu Gln Val Ser Ser Ser Tyr Ala Gly Gln Phe
            20                  25                  30
Arg Val Ile Gly Pro Arg His Pro Ile Arg Ala Leu Val Gly Asp Glu
```

```
        35                  40                  45
Val Glu Leu Pro Cys Arg Ile Ser Pro Gly Lys Asn Ala Thr Gly Met
    50                  55                  60
Glu Val Gly Trp Tyr Arg Pro Pro Phe Ser Arg Val Val His Leu Tyr
65                  70                  75                  80
Arg Asn Gly Lys Asp Gln Asp Gly Asp Gln Ala Pro Glu Tyr Arg Gly
                85                  90                  95
Arg Thr Glu Leu Leu Lys Asp Ala Ile Gly Glu Gly Lys Val Thr Leu
            100                 105                 110
Arg Ile Arg Asn Val Arg Phe Ser Asp Glu Gly Gly Phe Thr Cys Phe
        115                 120                 125
Phe Arg Asp His Ser Tyr Gln Glu Glu Ala Ala Met Glu Leu Lys Val
    130                 135                 140
Glu Asp Pro Phe Tyr Trp Val Glu Asp Pro Phe Tyr Trp Val Ser Pro
145                 150                 155                 160
Gly Val Leu Val Leu Leu Ala Val Leu Pro Val Leu Leu Leu Gln Ile
                165                 170                 175
Thr Val Gly Leu Val Phe Leu Cys Leu
            180                 185
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<210> 12
<211> 175
<212> PRT
<213> Rat

<400> 12

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Met Ala Gly Val Trp Ser Leu Ser Leu Pro Ser Cys Leu Leu Ser Leu
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Leu Leu Leu Leu Gln Leu Ser Arg Ser Tyr Ala Gly Gln Phe Arg Val
            20                  25                  30
Ile Gly Pro Gly His Pro Ile Arg Ala Leu Val Gly Asp Glu Ala Glu
        35                  40                  45
Leu Pro Cys Arg Ile Ser Pro Gly Lys Asn Ala Thr Cys Met Glu Val
    50                  55                  60
Gly Trp Tyr Arg Ser Pro Phe Ser Arg Val Val His Leu Tyr Arg Asn
65                  70                  75                  80
Gly Lys Asp Gln Asp Ala Glu Gln Ala Pro Glu Tyr Arg Gly Arg Thr
                85                  90                  95
Glu Leu Leu Lys Glu Ser Ile Gly Glu Gly Lys Val Ala Leu Arg Ile
            100                 105                 110
Gln Asn Val Arg Phe Ser Asp Glu Gly Gly Tyr Thr Cys Phe Phe Arg
        115                 120                 125
Asp His Ser Tyr Gln Glu Glu Ala Ala Val Glu Leu Lys Val Glu Asp
    130                 135                 140
Pro Phe Tyr Trp Ile Asn Pro Gly Val Leu Ala Leu Ile Ala Leu Val
145                 150                 155                 160
Pro Met Leu Leu Leu Val Ser Val Gly Leu Val Phe Leu Phe Leu
                165                 170                 175
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<210> 13
<211> 175

<212> PRT
<213> Mouse

<400> 13
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            20                  25                  30
Arg Val Ile Gly Pro Gly Tyr Pro Ile Arg Ala Leu Val Gly Asp Glu
        35                  40                  45
Ala Glu Leu Pro Cys Arg Ile Ser Pro Gly Lys Asn Ala Thr Gly Met
    50                  55                  60
Glu Val Gly Trp Tyr Arg Ser Pro Phe Ser Arg Val Val His Leu Tyr
65                  70                  75                  80
Arg Asn Gly Lys Asp Ala Glu Gln Ala Pro Glu Tyr Arg Gly Arg Thr
                85                  90                  95
Glu Leu Leu Lys Glu Thr Ile Ser Glu Gly Lys Val Thr Leu Arg Ile
            100                 105                 110
Gln Asn Val Arg Phe Ser Asp Glu Gly Gly Tyr Thr Cys Phe Phe Arg
        115                 120                 125
Asp His Ser Tyr Gln Glu Glu Ala Ala Met Glu Leu Lys Val Glu Asp
    130                 135                 140
Pro Phe Tyr Trp Val Asn Pro Gly Val Leu Thr Leu Ile Ala Leu Val
145                 150                 155                 160
Pro Thr Ile Leu Leu Val Ser Val Gly Leu Val Phe Leu Phe Leu
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<212> DNA
<213> Chicken

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dgmykgrtrd gsdgndrtav tssdsgsysc
 90

<210> 15
<211> 123
<212> PRT
<213> Homo sapien

<400> 15
Met Ala Ser Ser Leu Ala Phe Leu Leu Leu Asn Phe His Val Ser Leu
 1               5                  10                  15

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Leu Leu Val Gln Leu Leu Thr Pro Cys Ser Ala Gln Phe Ser Val Leu
            20                  25                  30
Gly Pro Ser Gly Pro Ile Leu Ala Met Val Gly Glu Asp Ala Asp Leu
        35                  40                  45
Pro Cys His Leu Phe Pro Thr Met Ser Ala Glu Thr Met Glu Leu Lys
    50                  55                  60
Trp Val Ser Ser Leu Arg Gln Val Val Asn Val Tyr Ala Asp Gly Lys
65                  70                  75                  80
Glu Val Glu Asp Arg Gln Ser Ala Pro Tyr Arg Gly Arg Thr Ser Ile
                85                  90                  95
Leu Arg Asp Gly Ile Thr Ala Gly Lys Ala Ala Leu Arg Ile His Asn
            100                 105                 110
Val Thr Ala Ser Asp Ser Gly Gln Leu Glu Cys
        115                 120
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<210> 16
<211> 124
<212> PRT
<213> Bovine

<400> 16

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Met Ala Val Phe Pro Asn Ser Cys Leu Ala Gly Cys Leu Leu Ile Phe
 1               5                  10                  15
Ile Leu Leu Gln Leu Pro Lys Leu Asp Ser Ala Pro Phe Asp Val Ile
            20                  25                  30
Gly Pro Pro Glu Pro Ile Leu Ala Val Val Gly Glu Asp Ala Glu Leu
        35                  40                  45
Pro Cys Arg Leu Ser Pro Asn Val Ser Ala Lys Gly Met Glu Leu Arg
    50                  55                  60
Trp Phe Arg Glu Lys Val Ser Pro Ala Val Phe Val Ser Arg Glu Gly
65                  70                  75                  80
Gln Glu Gln Glu Gly Glu Glu Met Ala Glu Tyr Arg Gly Arg Val Ser
                85                  90                  95
Leu Val Glu Asp His Ile Ala Glu Gly Ser Val Ala Val Arg Ile Gln
            100                 105                 110
Glu Val Lys Ala Ser Asp Asp Gly Glu Tyr Arg Cys
        115                 120
```

<210> 17
<211> 116
<212> PRT
<213> Homo sapien

<400> 17

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Met Gly His Thr Arg Arg Gln Gly Thr Ser Pro Ser Lys Cys Pro Tyr
 1               5                  10                  15
Leu Asn Phe Phe Gln Leu Leu Val Leu Ala Gly Leu Ser His Phe Cys
            20                  25                  30
Ser Gly Val Ile His Val Thr Lys Glu Val Lys Glu Val Ala Thr Leu
        35                  40                  45
Ser Cys Gly His Asn Val Ser Val Glu Glu Leu Ala Gln Thr Arg Ile
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50 55 60
Tyr Trp Gln Lys Glu Lys Lys Met Val Leu Thr Met Met Ser Gly Asp
65 70 75 80
Met Asn Ile Trp Pro Glu Tyr Lys Asn Arg Thr Ile Phe Asp Ile Thr
85 90 95
Asn Asn Leu Ser Ile Val Ile Leu Ala Leu Arg Pro Ser Asp Glu Gly
100 105 110
Thr Tyr Glu Cys
115

<210> 18
<211> 104
<212> PRT
<213> Homo sapien

<400> 18
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Pro Cys Gln Phe Ala Asn Ser Gln Asn Gln Ser Leu Ser Glu Leu Val
35 40 45
Val Phe Trp Gln Asp Gln Glu Asn Leu Val Leu Asn Glu Val Tyr Leu
50 55 60
Gly Lys Glu Lys Phe Asp Ser Val His Ser Lys Tyr Met Gly Arg Thr
65 70 75 80
Ser Phe Asp Ser Asp Ser Trp Thr Leu Arg Leu His Asn Leu Gln Ile
85 90 95
Lys Asp Lys Gly Leu Tyr Gln Cys
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<210> 19
<211> 34
<212> DNA
<213> Homo sapien

<400> 19
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34

<210> 20
<211> 58
<212> DNA
<213> Homo sapien

<400> 20
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58